CS 4442 Assign 3

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March 2024

1 Report

MDS Analysis: The MDS results between Conv 3, Conv 5, fc6, and fc7 (3, 5, 6, 7) has all of the different image categories clustered similarly in relation to the other categories. For example, the "animals" category is in the upper-left side of the trend in all of the images, relative to other categories.

Additionally, Conv 1 and Conv 4 (1, 4) results are also clusted similarly, similar to how the previously mentioned categories are clustered together.

The remaining layer, Conv 2 (2), is very distinct from all other layers. The results from the MDS analysis indicate similar properties between the mentioned layers, with distinct model representations between the different "groupings" of plot configurations.

RDM Analysis: Looking at the RDM plots shows similarity in many areas between different layers, with Conv 4, 5, and fc6 (4, 5, 6) all having quite similar patterns in the matrices. fc7 (7) is also quite similar, despite showing more dissimilarity, to fc6 (6). Additionally, we see similar patterns between the Conv 2 and Conv 3 RDMs (2, 3), indicating similarity between those two layers in model representation.
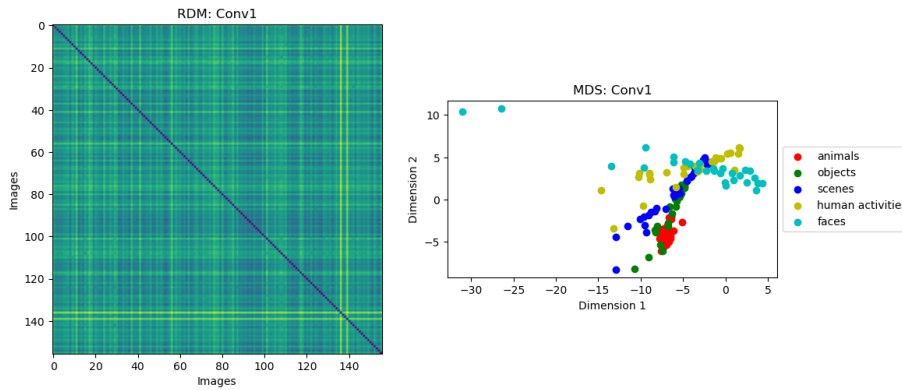

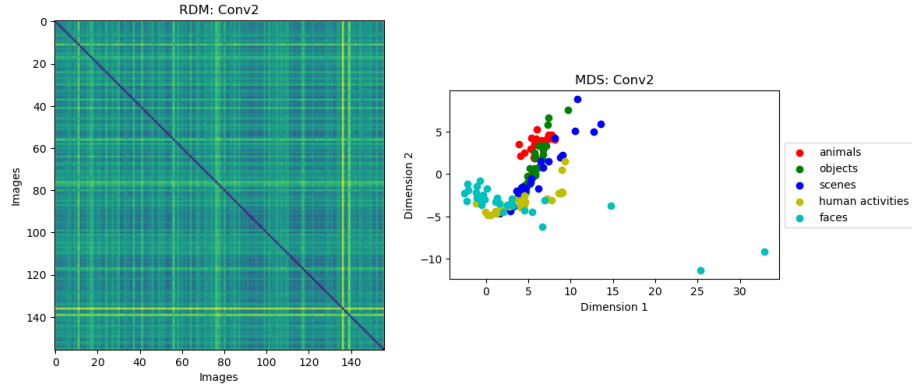Figure 1: RDM and MDS for Conv 1 layer of the AlexNet model for the 156 images.

Figure 2: RDM and MDS for Conv 2 layer of the AlexNet model for the 156 images.
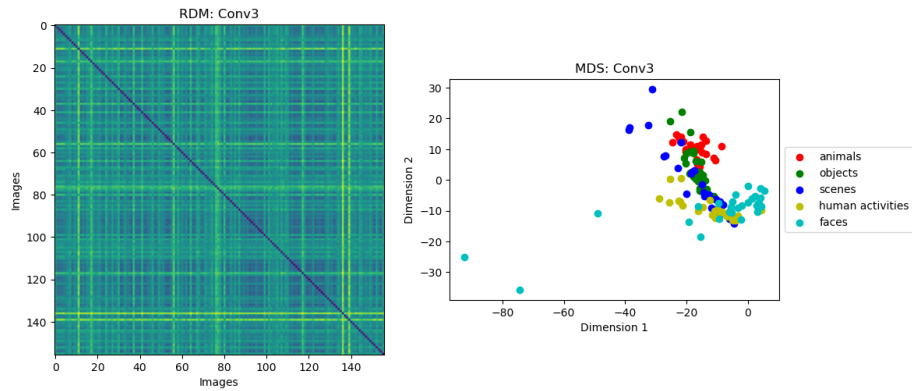

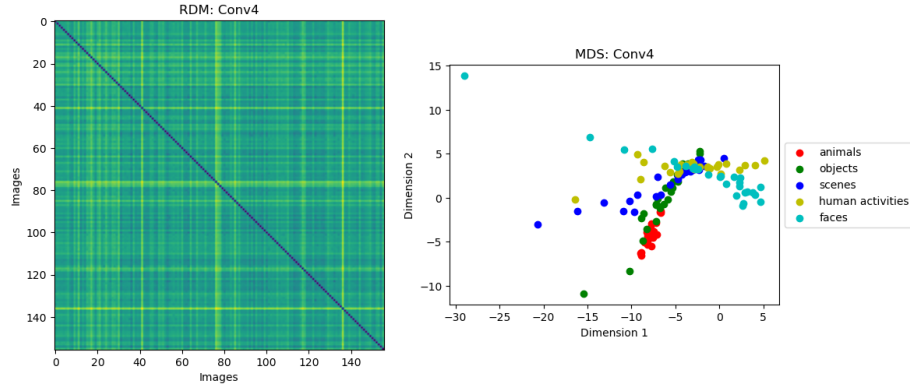Figure 3: RDM and MDS for Conv 3 layer of the AlexNet model for the 156 images.

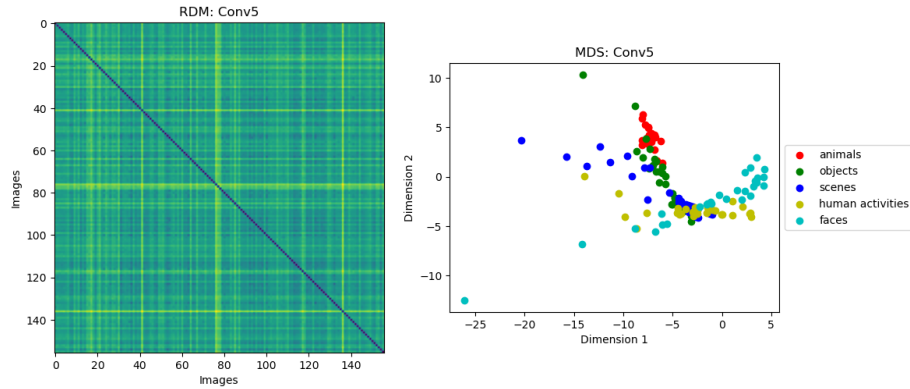Figure 4: RDM and MDS for Conv 4 layer of the AlexNet model for the 156 images.

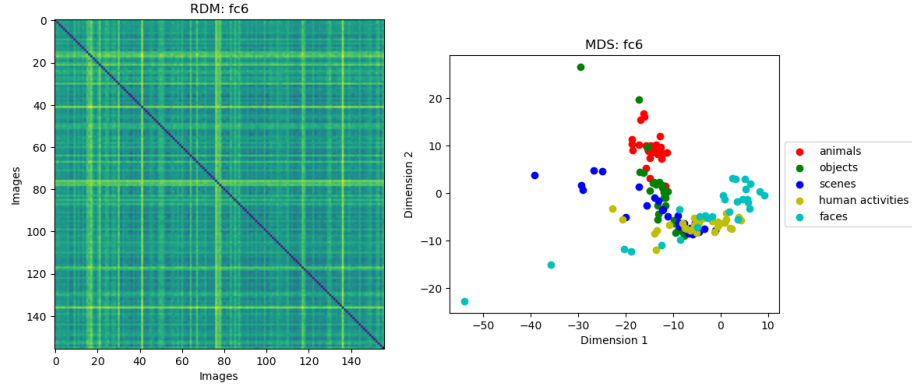Figure 5: RDM and MDS for Conv 5 layer of the AlexNet model for the 156 images.

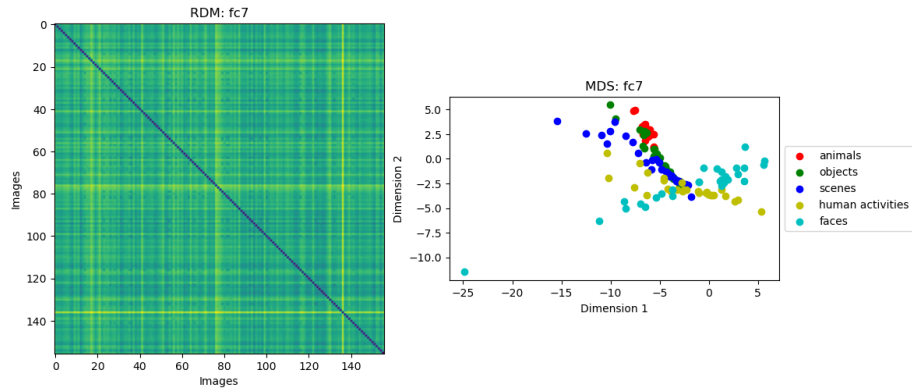Figure 6: RDM and MDS for fc6 layer of the AlexNet model for the 156 images.

Figure 7: RDM and MDS for fc7 layer of the AlexNet model for the 156 images.

4